

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2004/010171

A. CLASSIFICATION OF SUBJECT MATTER  
Int.Cl<sup>7</sup> G06T1/00, 7/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
Int.Cl<sup>7</sup> G06T1/00, 7/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
JSTPLUS (JOIS)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 11-281323 A (Isuzu Motors Ltd.), 15 October, 1999 (15.10.99), Par. Nos. [0010] to [0024]; all drawings (Family: none)	23-40
X	JP 11-281324 A (Isuzu Motors Ltd.), 15 October, 1999 (15.10.99), Par. Nos. [0014] to [0039]; all drawings (Family: none)	23-40

☒ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

\* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of the actual completion of the international search  
10 August, 2004 (10.08.04)

Date of mailing of the international search report  
31 August, 2004 (31.08.04)

Name and mailing address of the ISA/  
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

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## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	Michio MIYAKAWA et al., "Multi Modal Interface Jitsugen ni Muketa Chushiten no Real Time Keisokuho", The Transactions of the Institute of Electronics, Information and Communication Engineers, D-2, The Institute of Electronics, Information and Communication Engineers, 25 December, 2000 (25.12.00), Vol.J83-D-2, No.12, pages 2810 to 2821	1-40
A	JP 08-297019 A (Nissan Motor Co., Ltd.), 12 November, 1996 (12.11.96), Full text; all drawings (Family: none)	1-40

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**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

The inventions of claims 1-22 relate to an image processing device including means for extracting observation vectors from the moving picture frames, 3-dimensional model initialization means, and motion estimation means for estimating the motion of a predetermined characteristic point of a 3-dimensional object from the moving picture of the 3-dimensional object imaged by a monocular camera.

(Continued to extra sheet.)

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

**Remark on Protest**

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

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Continuation of Box No.III of continuation of first sheet(2)

The inventions of claims 23-26, 30-33, 37, 39 relate to an image processing device for imaging a face by a monocular camera, defining a 3-dimensional structure around the pupils on the face image by a static parameter and a dynamic parameter, and estimating the static parameter and the dynamic parameter so as to obtain a visual line from the moving picture imaged.

The inventions of claims 27-29, 34-36, 38, 40 relate to an image processing device for imaging a 3-dimensional object by a monocular camera, defining the 3-dimensional structure of the 3-dimensional object on the image by a rigid parameter and a non-rigid parameter, and estimating the rigid parameter and the non-rigid parameter so as to obtain the 3-dimensional motion of the 3-dimensional object from the imaged moving picture.